

### ***Claim Objection and Allowable Subject Matter***

The last Office Action objected to Claims 39-44 stating, “the phrase “such that” in line 12 should not be surrounded by commas. Appropriate correction is required. Claims 40-44 are necessarily included due to their dependency.” The Office Action went on to say “Claims 34-37 are allowed” and “Claims 39-44 would be allowable if rewritten or amended to overcome the objection set forth in this Office action.

The commas surrounding “such that” in original Claim 39 have been removed and original claims 34-37 have been rewritten as Claims 45-48 and original Claims 39-44 have been rewritten as Claims 49-54.

| 3445. A method of providing under-cabinet lighting, comprising the steps of:  
passing a high-frequency output cord along the bottom of a cabinet or a shelf,  
placing a ballasted socket assembly over the high-frequency output cord,  
positioning a channel provided in the ballasted socket assembly directly over the high-frequency output cord, and  
mounting the ballasted socket assemblies to the under side of the cabinet or shelf.

| 3546. The process described in claim 3445, additionally characterized by including the step of positioning a reflector between the ballasted socket assembly and the bottom of the cabinet or shelf.

| 3647. The process described in claim 3445, additionally characterized by including the step of orienting the ballasted socket assembly in one of four possible orientations.

| 3748. The process described in claim 3445, additionally characterized by including the step of piercing the insulation of the high-frequency output cord with an insulation displacement connector.

| 3949. A luminaire suitable for connection to and being powered from a high-frequency power source by way of an interconnecting cord;

the interconnecting cord comprising a first electrical conductor and a second electrical conductor encased within and separated from one another by a common insulating sheath;

the luminaire including two channels intersecting at right angles;

either channel being capable of receiving said interconnecting cord;

the luminaire also including a first input terminal and a second input terminal;

the input terminals being designed to pierce the insulation of the interconnecting cord;

and

the input terminals being located within the area of the intersection of the two channels

and positioned; such that; the first input terminal making contact with a first electrical conductor and the second input terminal making contact with the second electrical conductor during the installation of the luminaire no matter through which channel the electrical cord is routed.

4050. The luminaire described in claim 3949, wherein the luminaire can be mounted in place prior to the insertion of the interconnecting cord.

4151. The luminaire described in claim 3949, wherein the interconnecting cord is installed in place under the cabinet or shelf before the luminaire is mounted in place under the cabinet or shelf.

4252. The luminaire described in claim 3949, wherein multiple luminaires can be connected to the same interconnecting cord.

4353. The luminaire described in claim 3949, wherein the luminaire can be connected to the interconnecting cord in any one of four possible orientations.

4454. The luminaire described in claim 3949, wherein the input terminals have a circular or oval cross-section.

### ***Claim Rejections - 35 USC §103***

The last Office Action rejected Claims 33 and 38 stating, "Claims 33 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nilssen (U.S. Patent 5,559,393) in view of Cook et al. (U.S. Patent 4,521,839)"

#### **Re Claim 33**

##### **The Office Action went on to say:**

"Regarding claim 33, Nilssen discloses a high-frequency power source (abstract), an interconnecting cable (reference number CC1) and multiple luminaires (SFL1 and SFL2), the high-frequency power source being connected to and powered from a standard utility power line (Fig. 8) and having a high-frequency power output (abstract), the interconnecting cable being connected to the high-frequency power output (Fig. 8), the interconnecting cable not being a track of a track lighting system (Fig. 8), the interconnecting cable being supplied from a manufacturing facility with no luminaires connected thereto (Fig. 8, cord on the very left), the system further characterized in that the system is installed by an installer (Fig. 8, all systems are installed by some sort of installer), **during installation, luminaires are connected to a single interconnecting cable at multiple points along the interconnecting cable** (Fig. 8, two lamps on either side of each cable), the locations of the luminaires being determined by the installer (Fig. 8). (An installer, be it a professional installer or otherwise, always makes some determination of where the lamps go before a lighting system goes up.) Nilssen does not disclose an insulation displacement connection.

**Cook et al. discloses an insulation displacement connection (Fig. 2, middle right, portion of top wire by reference number 11).**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to **use the connection of Cook et al. in the apparatus of Nilssen to enable one to use the same set of wires to connect multiple luminaires so that they can be connected in parallel so that the string works even if one lamp burns out.**"

#### **Applicants Response Re Claim 33**

Applicant respectfully disagrees with at least four points made above by Examiner.

1. With respect to Nilssen '393, Examiner stated, "Nilssen discloses ... luminaires are connected to a single interconnecting cable at multiple points along the

interconnecting cable (Fig. 8, two lamps on either side of each cable)", but Fig. 8 clearly shows three separate "connect cords" CCm, CC1, and CC2. Nilssen describes in detail how these connections are made at Col 9, lines 34-43 as follows, "Connection between special receptacle SR and male receptacle MRm is effectuated by connect cord CCm, which has a plug means at each end; connection between female receptacle FRm and male receptacle MRs1 is effectuated by connect cord CC1, which also has a plug means at each end; and connection between female receptacle FRs1 and male receptacle MRs2 is effectuated by connect cord CC2, which likewise has a plug means at each end. Each plug means is commensurate with the receptacle into which it is to be inserted." Thus Nilssen '393 uses multiple connect cords which is contrary to Claim 33's limitation of "**a single interconnecting cable**".

2. With respect to Cooke '839, Examiner stated, "Cook et al. discloses an insulation displacement connection (Fig. 2, middle right, portion of top wire by reference number 11)" Applicant believes that Fig. 2 shows a lead "inner end 11" wrapped around the conductor of lead 4 in an area that has had approximately ¼ inch of the insulation stripped away. This cannot be considered a connection made by an insulation-displacement connection. Cooke '839 states in Col 3, lines 18-21, "The inner end 11 of each spring 8 projects out through the wall of its cylinder 10 and is **soldered or otherwise connected** to one of the wire leads 4. For each light bulb, one of the springs 8 is connected to one of the wire leads and the other spring is connected to the other lead, as shown in FIG. 2. Thus the bulb is connected across the leads." There is no assertion that the connection is made by an insulation displacement connector.
3. As an additional point re Cooke '893, Cooke does not suggest that the connections between "inner end 11" and the conductor of "lead 4" are made at the time of the installation of his Strip Lighting System as is claimed in Claim 33.
4. Examiner also states, "It would have been obvious to one of ordinary skill in the art at the time the invention was made to **use the connection of Cook et al. in the apparatus of Nilssen to enable one to use the same set of wires to connect multiple luminaires so that they can be connected in parallel so that the string works even if one lamp burns out.**" Contrary to Examiner's statement it not only would not have been obvious, it would have been impossible to "use the connection of Cook et al. in the apparatus of Nilssen to enable one to use the same

set of wires to connect multiple luminaires so that they can be connected in parallel so that the string works even if one lamp burns out” due to the fact that the very nature of Nilssen’ series resonant “special power supply SPS, whose schematic is shown in Fig. 5, requires that all the lamps be connected in series with one another and with the output of the SPS power supply. This is described in detail in Col. 9, Lines 4-67. Especially telling are the special “normally-shortened switch means integrally combined with a female receptacle means” (Col 9, Lines 62-63). Applicant believes there is no conceivable way the Nilssen series circuit could be combined with the Cooke parallel arrangement.

Applicant has rewritten original Claim 33 as now Claim 55.

3355. A high-frequency under-cabinet lighting system comprising: a high-frequency power source, an interconnecting cable, and multiple luminaires; the high-frequency power source being connected to and powered from a standard utility power line and having a high-frequency power output; the interconnecting cable being connected to said high-frequency power output; said interconnecting cable not being a track of a track lighting system; the interconnecting cable being supplied from a manufacturing facility with no luminaires connected thereto; the system further characterized in that the system is installed by an installer; during installation, luminaires are connected to a single interconnecting cable at multiple points along the interconnecting cable using an insulation-displacement connection; and the locations of the luminaires being determined by the installer.

These novel physical features of now Claim 55 produce new and unexpected results and hence are not obvious and are patentable over these references. Applicant respectfully request Examiner allow now Claim 55

### **Re Claim 38**

#### **The Office Action went on to say:**

“Concerning claim 38, Nilssen discloses a high-frequency power source (abstract), an interconnecting cable (Fig. 8, cable on far left with alternate power source) and multiple luminaires (Fig. 8), the interconnecting cable being supplied with no luminaires connected thereto (Fig. 8, cable on far left with alternate power source). Nilssen does not disclose the system being characterized in that multiple luminaires are powered from the same interconnecting cable without cutting the cable.

Cook et al. discloses the multiple luminaires that can be powered from the same interconnecting cable without cutting the cable (Figs. 1 and 2, column 3 in lines 15-27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the connection of Cook et al. in the apparatus of Nilssen to enable one to use the same set of wires to connect multiple luminaires so that they can be connected in parallel so that the string works even if one lamp burns out.”

#### **Applicants Response Re Claim 38**

Applicant disagrees with Examiners rejection for substantially the same reasons listed above regarding original Claim 33:

1. Examiner stated, “Cook et al. discloses the multiple luminaires that can be powered from the same interconnecting cable without cutting the cable (Figs. 1 and 2, column 3 in lines 15-27).”, but Cook ‘839 does not disclose the limitation that, “the interconnecting cable being supplied with no luminaires connected there to”. Clearly the Strip Lighting System in Cook is supplied with the “luminaires” attached to the “leads 4” with everything contained in a “flexible tube 1”.
2. Examiner stated, “It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the connection of Cook et al. in the apparatus of Nilssen to enable one to use the same set of wires to connect multiple luminaires so that they can be connected in parallel so that the string works even if one lamp burns out.”, but as stated above contrary to Examiner’s statement it not only wouldn’t have been obvious, it would have been impossible to “use the connection of Cook et al. in the apparatus of Nilssen to enable one to use the same set of wires to connect multiple luminaires so that they can be connected in parallel

so that the string works even if one lamp burns out” due to the fact that the very nature of Nilssen’ series resonant “special power supply SPS, whose schematic is shown in Fig. 5, requires that all the lamps be connected in series with one another and with the output of the SPS power supply. This is described in detail in Col. 9, Lines 4-67. Especially telling are the special “normally-shortcd switch means integrally combined with a female receptacle means” (Col 9, Lines 62-63).

Applicant believes there is no conceivable way the Nilssen series circuit could be combined with the Cooke parallel arrangement.

Thus the combination of Cook and Nilssen would not have been obvious and if attempted could not have worked. In addition if they could have been combined, neither Nilssen nor Cook suggests a single “interconnecting cable supplied with no luminaires connected there to”. These novel physical features of original Claim 38 produce new and unexpected results and hence are not obvious and are patentable over these references.

Applicant has renumbered original Claim 38 as now Claim 65 and has changed the word “cutting” to “severing” to more clearly define the claim since an insulation-displacement connector will cut into the insulation of the cable, but will not cut through the cable. The word sever more clearly makes this point.

3865. A high-frequency under-cabinet lighting system comprising: a high-frequency power source, an interconnecting cable, and multiple luminaires; the interconnecting cable being supplied with no luminaires connected there to; and the system further characterized in that multiple luminaires can be powered from the same interconnecting cable without ~~cutting~~ severing the interconnecting cable.

### **New Claims**

Applicant has substituted the following 6 independent claims and 26 dependent claims drawn to a lighting system to replace the 6 independent and 26 dependent claims withdrawn from the original application because they were drawn to an electrical connector.

56. The luminaire described in claim 55, wherein the luminaire can be mounted in place prior to the insertion of the interconnecting cable.
57. The luminaire described in claim 55, wherein the interconnecting cable is installed in place under the cabinet or shelf before the luminaire is mounted in place under the cabinet or shelf.
58. The luminaire described in claim 55, wherein the luminaires can be relocated along the interconnecting cable.
59. The luminaire described in claim 55, wherein the luminaire can be connected to the interconnecting cable in any one of four possible orientations.
60. The luminaire described in claim 55, wherein the input terminals have a circular or oval cross-section.
61. The luminaire described in claim 55, wherein the input terminals have a flat cross-section.
62. The luminaire described in claim 55, wherein the luminaires include a ballasting circuit capable of powering at least one gas-discharge lamp.
63. The luminaire described in claim 62, wherein the at least one gas-discharge lamp is a single-ended gas-discharge lamp.
64. The luminaire described in claim 62, wherein the ballasting circuit includes an arrangement capable of changing the power level provided to the at least one gas-discharge lamp.
66. The luminaire described in claim 65, wherein the luminaire can be mounted in place prior to the connection to the interconnecting cable.



67. The luminaire described in claim 65, wherein the interconnecting cable is installed in place under the cabinet or shelf before the luminaire is mounted in place under the cabinet or shelf.
68. The luminaire described in claim 65, wherein the luminaire can be relocated along the interconnecting cable.
69. The luminaire described in claim 65, wherein the luminaire can be connected to the interconnecting cable in any one of four possible orientations.
70. The luminaire described in claim 65, wherein the luminaire has input terminals; and the input terminals have a circular or oval cross-section.
71. The luminaire described in claim 65, wherein the luminaire has input terminals; and the input terminals have a flat cross-section.
72. The luminaire described in claim 65, wherein the luminaires include a ballasting circuit capable of powering at least one gas-discharge lamp.
73. The luminaire described in claim 72, wherein the at least one gas-discharge lamp is a single-ended gas-discharge lamp.
74. The luminaire described in claim 72, wherein the ballasting circuit includes an arrangement capable of changing the power level provided to the at least one gas-discharge lamp.
75. A high-frequency under-cabinet lighting system comprising: a high-frequency power source, an interconnecting cable, and multiple luminaires;  
the high-frequency power source being connected to and powered from a standard utility power line and having a high-frequency power output;

the interconnecting cable being connected to said high-frequency power output;  
said interconnecting cable not being a track of a track lighting system;  
the interconnecting cable being supplied from a manufacturing facility with no luminaires  
connected thereto;  
the system further characterized in that multiple luminaires can be powered from the  
same interconnecting cable without severing the interconnecting cable; and  
during installation, luminaires are connected to a single interconnecting cable at multiple  
points along the interconnecting cable using an insulation-displacement  
connection.

76. The luminaire described in claim 75, wherein the luminaire can be mounted in place  
prior to the connection to the interconnecting cable.

77. The luminaire described in claim 75, wherein the interconnecting cable is installed in  
place under the cabinet or shelf before the luminaire is mounted in place under the  
cabinet or shelf.

78. The luminaire described in claim 75, wherein the luminaire can be relocated along the  
interconnecting cable.

79. The luminaire described in claim 75, wherein the luminaire can be connected to the  
interconnecting cable in any one of four possible orientations.

80. The luminaire described in claim 75, wherein the luminaire has input terminals; and  
the input terminals have a flat cross-section.

81. The luminaire described in claim 75, wherein the luminaires include a ballasting  
circuit capable of powering at least one gas-discharge lamp.

82. The luminaire described in claim 81, wherein the at least one gas-discharge lamp is a  
single-ended gas-discharge lamp.

83. The luminaire described in claim 81, wherein the ballasting circuit includes an arrangement capable of changing the power level provided to the at least one gas-discharge lamp.

84. A method of providing under-cabinet lighting, comprising the steps of:  
mounting the ballasted socket assemblies to the under side of the cabinet or shelf,  
passing a high-frequency output cord along the bottom of a cabinet or a shelf,  
placing the high-frequency output cord within a channel provided in the ballasted socket assembly,  
operating a mechanism that causes the ballasted socket assembly to make electrical contact with conductors within the high-frequency output cord.

85. A method of providing under-cabinet lighting, comprising the steps of:  
attaching a reflector to a ballasted-socket assembly,  
mounting the ballasted socket assembly to the under side of the cabinet or shelf,  
passing a high-frequency output cord along the bottom of a cabinet or a shelf,  
placing the high-frequency output cord within a channel provided in the ballasted socket assembly,  
operating a mechanism that causes the ballasted socket assembly to make electrical contact with conductors within the high-frequency output cord.

86. A method of providing under-cabinet lighting, comprising the steps of:  
positioning a reflector between a ballasted-socket assembly and the underside of a cabinet or shelf,  
mounting the ballasted socket assemblies to the under side of the cabinet or shelf  
passing a high-frequency output cord along the bottom of a cabinet or a shelf,  
placing the high-frequency output cord within a channel provided in the ballasted socket assembly,  
operating a mechanism that causes the ballasted socket assembly to make electrical contact with conductors within the high-frequency output cord.

87. A method of providing under-cabinet lighting, comprising the steps of:  
orienting a ballasted-socket assembly in one of four possible orientations,  
mounting the ballasted socket assembly to the underside of the cabinet or shelf,  
passing a high-frequency output cord along the bottom of a cabinet or a shelf,  
placing the high-frequency output cord within a channel provided in the ballasted socket  
assembly,  
operating a mechanism that causes the ballasted socket assembly to make electrical  
contact with conductors within the high-frequency output cord.

88. A method of providing under-cabinet lighting using gas-discharge lamps, comprising  
the steps of:  
mounting the ballasted socket assemblies to the under side of the cabinet or shelf,  
passing a high-frequency output cord along the bottom of a cabinet or a shelf,  
placing the high-frequency output cord within a channel provided in the ballasted socket  
assembly,  
operating a mechanism that causes the ballasted socket assembly to make electrical  
contact with conductors within the high-frequency output cord.

## Conclusion

For all of the above reasons, Applicant submits that the specification and claims are now in proper form, and that claims define patentably over the prior art. Therefore Applicant submits that this application is now in condition for allowance, which action he respectfully solicits.

## Request For Conditional Constructive Assistance

Applicant has amended the claims of this application so that they are proper, definite, and define novel structure, which is also unobvious. If for any reason this application is not believed to be in full condition for allowance, Applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. § 706.03(d) and § 707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Very respectfully,



Dale Fiene

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Dale Fiene, Applicant

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Date